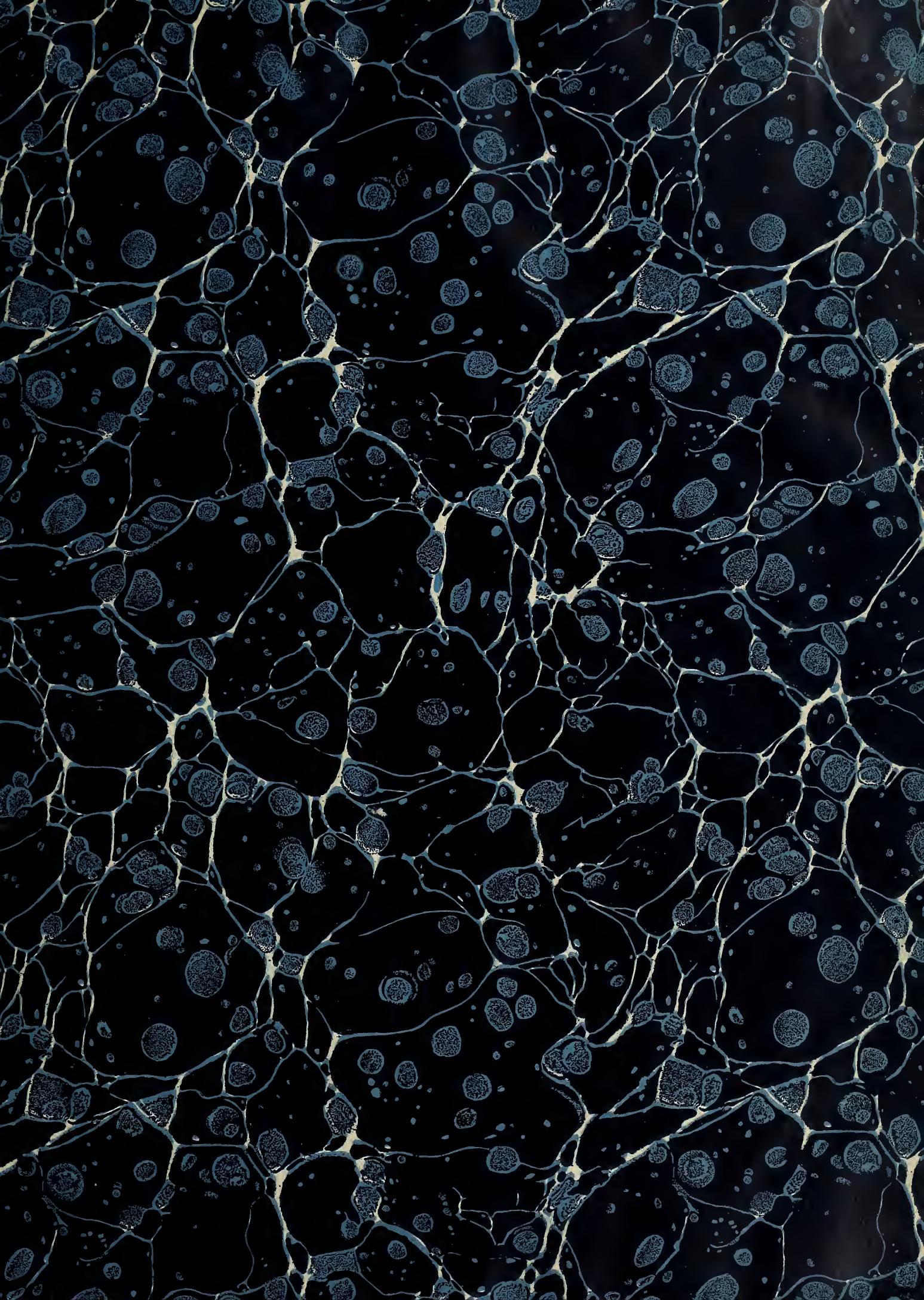


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BETTER FRUIT

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VOLUME XII

JULY, 1917

NUMBER 1
38

TWELFTH ANNIVERSARY EDITION OF BETTER FRUIT

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U. S. Department of Agriculture

Not Overproduction of Apples But Lack of Distribution

The leading article in this edition, by E. H. Shepard, Editor, showing there are 35,085 towns in the United States, of which 611 have been sold Northwestern apples in carlots direct, or only $1\frac{7}{10}\%$ — the most important facts that have ever been presented to the apple growers of the Northwest.

BETTER FRUIT has been a pioneer, an originator, creator and developer.

Better Fruit was the first big factor in standardizing and improving the pack of the Northwest.

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Better Fruit was a pioneer in advocating fruit product factories, cider plants, vinegar plants, evaporators, driers and canneries.

Better Fruit was the first publication to call the attention of the fruit growers to the fact that exorbitant retail prices of apples were holding up consumption.

Better Fruit has been a pioneer in advocating every method for improvement and progress that has been adopted in the Northwest.

The Editor has put in eleven years of the hardest work of his life in helping the fruit growers of the Northwest to develop and improve their industry and better their condition.

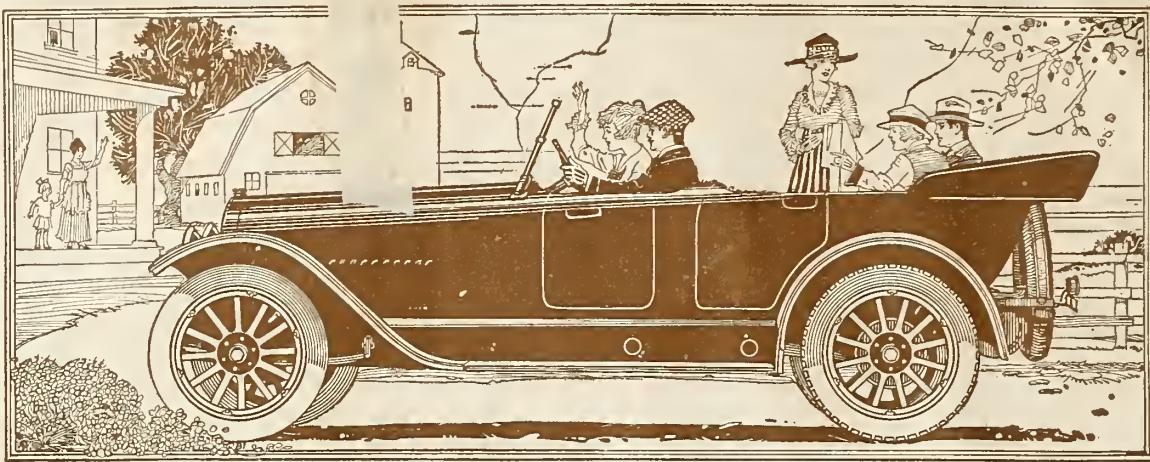
Better Fruit will continue the good work, helping the fruit grower to the fullest extent in every possible way.

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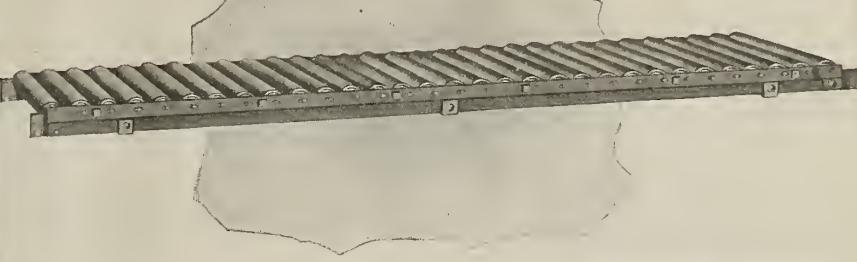
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BETTER FRUIT

AN ILLUSTRATED MAGAZINE PUBLISHED MONTHLY IN THE INTEREST OF MODERN, PROGRESSIVE FRUIT GROWING AND MARKETING

Not Overproduction of Apples, But Lack of Distribution

The Country Has Not Been Sold, with Facts to Show It

By E. H. Shepard, Editor.

STATISTICAL TABLE SHOWING THE NUMBER OF TOWNS IN EACH STATE OF OVER 3,000
POPULATION, SOLD AND NOT SOLD IN CARLOTS

14 per cent only of towns over 3,000 sold in the United States. 86 per cent not sold.

Towns under 3,000: Sold, 311; not sold, 9,298.

Towns under 3,000: Sold, 311; not sold, 9,298.
Supporting one or more newspapers. Sold,

Total towns in United States, approximately.

Total towns in United States, approximately, 35,085. Sold, 611—.01 $\frac{1}{10}$ per cent; not sold,

34,474—98.3 per cent.

ON, SOLD APPLES IN CARLOTS

Idaho—Continued

TOWNS OF OVER 3,000 POPULATION, SOLD APPLES IN CARLOTS

<i>Alabama</i>		<i>Colorado</i>		<i>Idaho—Continued</i>	
	Population		Population		Population
Selma	14,988	Sterling	3,044	Twin Falls	5,258
Montgomery	41,777	Boulder	10,933	Pocatello	11,267
Birmingham	166,154	Trinidad	12,274	Boise	29,637
Mobile	55,573	Colorado Springs	31,717		
		Denver	245,523		
		Pueblo	51,218		
					<i>Illinois</i>
					Champaign
					13,835
					Freeport
					19,018
					Bloomington
					26,850
					Decatur
					37,525
					Galesburg
					23,580
					Chicago
					2,393,325
					Peoria
					70,066
					Rockford
					52,337
					<i>Indiana</i>
					Logansport
					20,262
					Muncie
					33,500
					Evansville
					71,284
					Fort Wayne
					80,000
					Indianapolis
					259,413
					<i>Iowa</i>
					Oelwein
					6,028
					Fort Dodge
					19,200
					Keokuk
					14,008
					Marshalltown
					14,042
					Mason City
					13,495
					Burlington
					24,802
					Cedar Rapids
					35,858
					Clinton
					26,302

There are a great many people who believe that the unsatisfactory prices on apples are not due to overproduction but to a lack of distribution. I have given this matter a great deal of thought and study for years, and have done much research work, endeavoring to collect statistics and present facts that would be of value, but until recently I could find no arrangements of the population of the different towns with reference to their population sufficiently classified in a way to be of value. A few months ago I picked up the American Newspaper Annual and Directory of N. W. Ayer & Son, Philadelphia, and found a list of every town in the United States in which a newspaper was printed. In this list there are 11,695 towns, of which 9,298 are smaller than 3,000 population and 2,086 towns are over 3,000 population. But more important than this, the towns of over 3,000 population are arranged under the following classifications—in the forepart of the book, page 12, in Alabama, for instance, it gives the list of towns, arranged alphabetically, from 3,000 to 5,000 population; from 5,000 to 10,000 population; from 10,000 to 20,000 population; from 20,000 to 50,000 population, and from 50,000 upward, and so on with each state. In addition to this, under each state is given an alphabetical list of every town with a newspaper in each state with the population of each town or city. It must be borne in mind that in the list of towns published in the N. W. Ayer & Son American Newspaper Annual and Directory that only the towns are given where a newspaper is published. Upon counting the list of towns in the Produce Reporter Credit Book, 212 West Washington Street, Chicago, I find the number of towns listed where there are produce dealers, taking the State of Alabama as an example, are three times as great as the number of towns listed by N. W. Ayer & Son in the Newspaper Annual and Directory, which would make the towns in the United States approximately 35,085.

I have kept a record of every car-load with destination, as reported to the Fruit Growers' Agency during the month of November, the heaviest shipping season, representing 75 per cent of the tonnage of the Northwest, and in addition have taken the published list of towns to which the Northwestern Fruit Exchange has sold for the years 1910, 1911, 1912, 1913, 1914, 1915, to December 28, 1916. All of these towns I have carefully checked up in the Newspaper Annual and Directory of

TOWNS OF OVER 3,000 POPULATION, SOLD APPLES IN CARLOTS—Continued

Iowa—Continued		Montana—Continued		South Dakota—Continued	
	Population		Population		Population
Council Bluffs	30,778	Helena	13,258	Huron	5,791
Davenport	46,340	Missoula	16,492	Mitchell	7,785
Duhuque	41,698	Butte	41,781	Watertown	8,313
Otumwa	23,586	Great Falls	20,000	Aberdeen	11,846
Waterloo	32,703			Sioux Falls	20,000
Des Moines	96,691	Nebraska			
Sioux City	54,098	Holdredge	3,030	Knoxville	37,924
		McCook	3,765	Chattanooga	57,057
Kansas		Columbus	5,014	Memphis	113,231
Beloit	3,350	Fremont	9,345	Nashville	114,899
Clay Centre	4,000	Grand Island	11,505		
Columbus	3,064	Hastings	10,252	Texas	
Dodge City	3,214	Lincoln	45,613	Ballinger	3,536
El Dorado	3,129	Omaha	133,274	Big Spring	4,102
Great Bend	4,622			Cameron	3,263
Herrington	3,272	Nevada		Crockett	3,947
McPherson	3,546	Reno	13,579	Cuero	3,109
Arkansas City	7,508	New Hampshire		Nacogdoches	3,369
Concordia	5,000	Manchester	75,635	Navasota	3,284
Manhattan	6,500	New Jersey		San Marcos	4,071
Ottawa	7,650	Jersey City	270,903	Sweetwater	4,176
Coffeyville	12,687	New Mexico		Bonham	6,000
Fort Scott	10,522	Albuquerque	13,058	Brownwood	6,967
Hutchinson	19,339			Corsicana	9,934
Independence	13,296	New York		Gainesville	7,624
Lawrence	13,018	Lyons	4,742	Greenville	9,696
Parsons	14,500	LeRoy	4,084	Hillsboro	6,115
Pittsburg	17,700	Medina	6,079	Sulphur Springs	5,151
Salina	11,354	Ithaca	16,750	Taylor	5,314
Topeka	43,884	Elmira	40,073	Weahachie	6,205
Kansas City	94,271	Albany	107,979	Ahilee	12,806
Wichita	67,000	Buffalo	461,887	Amarillo	13,585
		New York		Brownsville	12,310
Kentucky		Syracuse	4,012,821	Cleburne	11,587
Lexington	38,819	Utica	145,237	Cornus Christi	15,000
Louisville	235,114		80,589	Denison	14,409
Louisiana		North Dakota		Marshall	12,984
Alexandria	13,582	Valley City	4,666	Palestine	11,412
Lake Charles	13,481	Bismarck	5,443	Paris	12,081
Shreveport	32,906	Devil's Lake	5,157	San Angelo	10,321
New Orleans	361,221	Fargo	16,351	Sherman	13,157
Maine		Grand Forks	14,827	Temple	12,704
Rockland	8,182	Minot	10,112	Tyler	11,393
Bangor	26,061			Wichita Falls	10,760
Portland	62,161	Ohio		Austin	23,218
Maryland		Bellefontaine	8,915	Beaumont	25,433
Baltimore	579,590	Marietta	12,924	El Paso	49,505
Massachusetts		Newark	28,271	Galveston	10,289
Fitchburg	40,507	Akron	80,291	Waco	28,707
Boston	733,802	Cincinnati	402,175	Dallas	111,986
Lawrence	95,834	Cleveland	639,431	Fort Worth	94,494
Lowell	111,004	Columbus	204,567	Houston	98,122
Springfield	100,375	Dayton	123,794	San Antonio	115,063
Worcester	160,117	Toledo	200,000		
Michigan		Youngstown	93,341	Utah	
Detroit	650,000			Brigham	3,685
Minnesota		Alva	3,688	Logan	7,522
Alexandria	3,001	Duncan	3,000	Ogden	29,528
Willmar	4,135	Hobart	3,845	Salt Lake	109,530
Moorhead	4,840	Ardmore	9,868		
Albert Lea	10,000	Durant	7,200	Vermont	
Brainerd	8,951	El Reno	7,872	Portsmouth	37,569
Crookston	7,559	Hugo	6,000	Norfolk	86,540
Fergus Falls	6,887	Lawton	7,788	Richmond	150,000
Thief River Falls	5,500	Miami	5,000		
St. Cloud	11,125	Chickasha	13,873	Washington	
Winona	18,583	Enid	18,209	Chehalis	4,507
Minneapolis	343,466	Guthrie	11,911	Puyallup	4,544
St. Paul	236,766	McAlester	16,716	Centralia	7,311
Mississippi		Sapulpa	11,431	Olympia	6,996
Hattiesburg	14,952	Shawnee	16,312	Hoquiam	10,540
Jackson	26,990	Muskogee	38,309	Bellingham	29,937
Meridian	21,806	Tulsa	27,634	Everett	32,048
Missouri		Oklahoma City	83,559	Seattle	313,029
Hannibal	21,766			Spokane	135,657
Joplin	32,848	Oregon		Tacoma	103,418
Kansas City	281,911	The Dalles	4,880		
St. Joesph	82,712	Baker	6,742	West Virginia	
St. Louis	734,667	Astoria	10,117	Hinton	3,656
Montana		Salem	18,286	Clarksburg	11,394
Red Lodge	4,860	Portland	260,601	Charleston	27,703
Roundup	3,000				
Bozeman	5,107	Pennsylvania		Wisconsin	
Havre	5,000	Altoona	56,553	Rice Lake	4,500
Lewiston	5,000	Philadelphia	1,657,810	Beloit	17,122
Livingston	5,359	Pittsburg	564,878	LaCrosse	31,367
Miles City	7,000	Seranton	141,353	Oshkosh	35,097
Anaconda	10,421	Wilkes-Barre	73,660	Racine	44,528
Billings	13,020			Superior	44,344
		Rhode Island		Milwaukee	417,054
		Providence	247,660		
		South Dakota			
		Deadwood	3,113	Casper	4,040
		Rapid City	4,268	Laramie	4,962
		Redfield	3,000	Cheyenne	9,661
				Rock Springs	5,699
				Sheridan	8,906

LIST OF TOWNS UNDER 3,000 POPULATION IN EACH STATE, SOLD CARLOTS, ARRANGED ALPHABETICALLY

N. W. Ayer & Son, and from this have compiled the table presented in connection with this article, statistically arranged, showing the number of towns with a population of from 3,000 to 5,000 in each state, "sold" and "not sold"; the number of towns from 5,000 to 10,000, "sold" and "not sold"; the number of towns from 10,000 to 20,000, "sold" and "not sold"; the number of towns from 20,000 to 50,000, "sold" and "not sold," and the number of towns 50,000 and upward, "sold" and "not sold," in carlots direct.

In referring to the statistical list in connection with this article, please note there are 2,086 towns of over 3,000 population—295 of them were sold 1,791 were not sold; 14 per cent have been sold and 86 per cent not sold. There are 9,609 towns in the United States sufficiently large to maintain a newspaper, of which 311 have been sold and 9,298 have not been sold—3 per cent sold, 97 per cent not sold. Of the total towns in the United States large enough to maintain a newspaper there are 11,695, of which 611 have been sold and 11,089 not sold.

There are approximately 35,085 towns in the United States, of which 611 have been sold and 34,474 not sold, or .01 1/10 per cent sold and 98.3 unsold—a most remarkable showing. I really believe in a great measure that I am justified in making the statement that there are comparatively few, if any, who realize that a careful checking up of the towns sold in complete lists of the entire towns in the United States would show such wonderful contrasts, or, in other words, show that but .01 1/10 towns of the United States had been sold Northwestern apples in carload lots, or 611 towns, and that 34,474 towns, or 98.3 per cent had not been sold.

Now, it may be claimed and undoubtedly is true, that a great many of these towns do not have commission merchants or fruit jobbers. On the other hand, it must be recognized, according to an approximate estimated list, that some 35,000 towns have dealers who handle fruit or farm produce of one kind or another. I do not maintain for a moment that every town in the United States, or that every town over 3,000 population can be sold Northwestern apples direct in carlots, but it does seem, and undoubtedly is true, there are hundreds, yes thousands, of towns that have not been sold in carlots which can be sold. I realize fully there are many towns of over 3,000 population in the list which are close to some big city, like Chicago for instance, where they obtain their supply of box apples in 25, 50 or 100-box lots, but there are many towns of less than 3,000 population sufficiently remote from the large distributing centers which can be supplied direct, saving considerable extra freight and frequently unnecessary handling and extra profit. It must be admitted that occasionally the credit of some merchant in some small town might not be sufficiently good to sell on credit, but as the apple business should be done f.o.b., subject to sight draft, if the car is not accepted and paid for it could

California—Dunsmuir, Montague, Stanford, San Pedro, Weed.

Colorado—Haxtun, LaMar, Brush, East Morgan, Fort Morgan.

Iowa—Cumberland, Cambria, Dike, Fairfield, Malvern, Strawberry Point, Walcott.

Idaho—American Falls, Arimo, Arco, Blackfoot, Buhl, Emmett, Genesee, Gooding, Hazelton, Minidoka, Middleton, Mt. Pelier, McCammon, Michland, Malad, Payette, Purcell, Parma, Picabo, Rupert, Rexburg, St. Maries, St. Anthony, Smiths Ferry, Shoshone, Weiser, Wendell.

Kansas—Almena, Arlington, Altamont, Anthony, Brownell, Clifton, Condon, Eureka, Ellsworth, Grainfield, Gorham, Herndon, Hoisington, Hoxie, Jamestown, Kingsley, Luray, Marion, Morganville, Morgan, Neodesha, Ness City, Oakley, Olpe, Osborn, Phillipsburg, Protection, Scott City, Sterling, Wakefield, Long Island, McDonald, Norton, Norfolk, Simpson, St. Francis, Traer, Vulcan, Whitewater, Woodruff.

Louisiana—DeRidder.

Maine—Pt. Fairfield.

Minnesota—Breckenridge, Dilworth, Glenwood, Graceville, Henning, Mankato, North Redwood, Redwood Falls, Wadena, Avon, Black Duck, Brewster, Cass Lake, Dalton, Detroit, Eagle Bend, Horton, Lake Park, Minnesota Transfer, Morris, Red Lake Falls, Twin Valley, Raymond, Wheaton.

Montana—Bainville, Baker, Big Sandy, Bouer, Bryan, Buffalo, Cascade, Conrad, Cuthank, Fairview, Gilford, Glendive, Glasgow, Hinsdale, Homestead, Medicine Lake, Plentywood, Poplar, Sidney, Westby, Whitetail, Winifred, Wold Point, Brady, Bridger, Belgrade, Bowman, Browning, Chinook, Coffee Creek, Deer Lodge, Dillon, Drummond, Forsythe, Franklin, Geraldine, Laurel,

LIST OF TOWNS UNDER 3,000 POPULATION IN EACH STATE, SOLD CARLOTS,
ARRANGED ALPHABETICALLY—Continued

Malta, Miles City, Norris, Pony, Rosebud, Stamford, Sweetwater, Townsend, White Fish, Wolf Creek.

Missouri—Hale.

Massachusetts—Bonita.

New York—Burt, Suspension Bridge, Wilson.

North Dakota—Alexander, Antler, Anamoose, Arnegard, Arthur, Beach, Berthold, Bismarck, Bowhells, Carrington, Charbonneau, Crosby, Dickinson, Drake, Finley, Hamlet, Hampden, Keene, Leeds, Lignite, Lisbon, Medina, Noonan, Plaza, Portal, Powers Lake, Rock Lake, Rugby, Stanley, Tioga, Towner, White Earth, Wildrose, Wolfard, New Rockford, Bowman, Braddock, Chamberlain, Cando, Edison, Flasher, Ft. Clark, Goodrich, Highmore, Hazelton, Hattinger, Hebron, Kildeer, Kenmore, Langdon, Laketo, Leith, Mandan, New Salem, New Berg, Oakes, Parshall, Regan, St. Thomas, Sterling, Starkweather, Sheldon, Turtle Lake, Werner, Wahpeton, West Hope, York.

Oregon—Enterprise, Bend, Klamath Falls, North Bend, Niagara.

Oklahoma—Clinton, Ojima, Pureell, Woodward, Camanche, Herrington.

Nebraska—Danbury, Gothenburg, Giltner, Gering, Lester, Moorefield, Riverton, Scottsbluff, Upland, Watertown.

Pennsylvania—Biggerville, DeBois.

South Dakota—Browning, Gettysburg, Kodoka, Claremont, Canova, Eureka, Groton, Gregory, Hill City, Java, Lemmon, Mott, Parker, Rie Heights, Teton, Timber Lake, Vermillion, Webster, White Lake, Wolsey.

Texas—Ennis, Llano, Bowie, Ciseo, Comanche, Loekdale, Loekhart, Mexia, Plainview, Rockdale, San Augustine, Stanford, Dalhart, Victoria, Waurika.

Utah—Milwood Spur.

Washington—Sumner, Ballard, Krupp.

Wisconsin—Baron, Boscoebel, Osecola, Broadhead, Bellinger.

West Virginia—Wheeler.

Wyoming—Gillette, Hanna, Pine Bluffs, Upton, Basin, Cody, Douglas, Gurnsey, Rawlins, Thermopolis.

be diverted elsewhere. With this immense list of towns unsold it seems worthy of suggestion to the selling agencies and association directors that they follow the method adopted by the big jobbers and manufacturers, by putting out a sufficient number of traveling representatives or salesmen to cover the different states and territories thoroughly, with a view of increasing the number of towns sold, creating a wider distribution and a greater consumption. If the town of medium-sized population can be sold direct, saving extra freight and unnecessary extra handling and extra unnecessary profit, the consumers in that city will receive their apples at just so much less per box, creating a greater consumption if these markets are properly worked and sold. Furthermore, it will mean that big cities and big distributing centers will be relieved from overcrowding and pressure, consequently firmer and better prices can be maintained and secured.

In connection with this statement it must be borne in mind and remembered that whatever the market price is in a town like St. Louis or Kansas City, that is the price set in all of the smaller towns in a certain radius. If you ask a dealer in a small town a quarter more than the St. Louis price you cannot sell him, because all that is necessary for him to do is to call up the commission house, broker or dealer and ask him to ship him 100 boxes, more or less. It must be admitted Michigan raises a lot of apples, yet there are 76 towns in the State of Michigan of over 3,000 population and only one has been sold. Illinois raises a lot of apples also; however, eight towns have been sold in the State of Illinois. Take as an illustration the cities in a state. In California, Marysville, with a population of 5,000, has been sold, yet Chico, with a population of 12,000, has not been sold; neither town is in an apple-producing section. But the number of deductions and conclusions to be drawn are infinite. Limited space prevents a complete analysis of the situation. The expense of publishing in detail is too great to publish in "Better Fruit." However, the statistical tables present

sufficient information to enable every shipping concern in the Northwest to analyze the situation completely. Every shipping concern should obtain a Produce Reporter Credit Book and the American Newspaper Annual and Directory of N. W. Ayer & Son, Philadelphia, and take a list of the towns as reported sold of over 3,000 population and under 5,000 population, and check them off in these two publications. After doing this at a glance you can see which towns have been sold, the population of each, and which have not been sold, in every state and territory in the Union. The American Newspaper Annual and Directory of N. W. Ayer & Son will give you the list specified, according to population, 3,000 to 5,000, 5,000 to 10,000, 10,000 to 20,000, 20,000 to 50,000 and 50,000 up, and the Produce Reporter furnishes a list of all the produce dealers and commission men in every town, with their credit rating.

I regret that space in "Better Fruit" is not sufficient and that "Better Fruit" cannot afford the expense of the publication of the complete list of towns unsold, but I have presented sufficient facts and have given the shipping concerns a list of the towns sold, so that every shipping concern at a small expense can check up from the list of towns sold according to the published list in this edition of "Better Fruit," and after doing this he can see at a glance just what towns in each state have not been sold, and by referring to the Produce Reporter Credit Book can find the names of the men engaged in the commission business with whom business can be done.

I do not claim that every town can be or should be sold direct; some of the towns are close to jobbing centers and can be supplied in a more satisfactory way than buying direct in carlots. On the other hand, there are many towns with sufficient population to take care of carlots where jobbing facilities do not serve them satisfactorily or where the distance is so great there is extra expense on account of freight and extra expense in rehandling and unnecessary intermediate profit. Whenever it is advisable to sell towns direct it should be done not only for the pur-

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pose of increasing the markets but for the purpose of increasing consumption, because in so doing the purchaser will save the extra expense of extra freight and extra profit, and by receiving apples direct the dealer will save one extra handling, consequently he will be able to furnish the apples to the consumer in better condition at lower prices, which will be a big factor in increasing distribution and creating greater consumption.

I firmly believe if every shipping concern in the Northwest will accept the information and the suggestions contained in this article, and if each and every one of them will get busy in an earnest endeavor to increase their distribution that we won't hear much more complaint about overproduction, and I am equally and firmly convinced that if the suggestions given are followed out that every fruitgrower in the Northwest will get better prices for his apples and find his bank account larger at the end of the year than he has in the past few years that I have been engaged in growing apples, covering a period of fourteen years.

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A Home-Made Sun Dryer

By Jessie M. Hoover, Professor of Home Economics, Moscow, Idaho

A YEAR ago the writer visited four hundred farm homes in Southern Idaho. Before the home visits were made the women of each community or neighborhood were assembled at a central meeting place and were asked to consider the best labor-saving device they possessed and if possible show it to the visitor when she called at their home. Pictures were taken of many of the best devices and this dryer was one of the devices which seemed especially interesting. Judging by the results sampled the efficiency of the dryer cannot be questioned.

Figure I shows the completed dryer with ventilating holes at the base and apex.

To Make

Two panes of glass 36 by 36 inches each are required. Figure II shows one of these glasses cut diagonally so as to form two right-angled triangles. Figure III shows the second glass cut so as to form a triangle with two equal sides. In Figure III there is a waste of the two upper corners of the glass.

These three triangles are cased with wood in much the same way as a window sash.

For the base of the dryer build a square wooden platform of the same dimensions as the base of the cased glass. This should be placed on a table or substantial frame in the dooryard where it will have a good exposure to the sun, i. e., place the triangle A B C on the south side of the base, as shown in Figure I. On the east and west sides of the wooden base place the two triangles shown in Figure II, A' and A'', in each case being placed on the wooden base. The edge C' is joined to the edge C. The edge B' is joined to the edge B. The edges B' and C' will be slightly longer than the edges of B and C, but these can be extended up into the wooden apex. The back of this dryer may be made of tightly-matched boards, hinged along the north side of the base;

or it may be made of the wire gauze screening. Where dust storms or sudden showers are likely to occur the

wooden back is preferable. The door is fastened to the apex of the dryer with a suitable catch. A removable frame of wooden slats or heavy wire elevated an inch or two above the base will furnish a free circulation of air from beneath, and the food spread on it will dry more quickly. The air enters the small holes at the base and, accompanied by the moisture from the evaporating fruit, passes out at the inch hole in the apex.

To save steps the dryer might be placed against a south window and could thus be filled and emptied without going outside. For protection in winter the dryer can be set under a shed. The owner of this dryer reports that it cost her six dollars complete. The position of the glass aids in concentrating the sun's rays and increasing the heat. The enclosure prevents the entrance of dust and insects.

The Bing cherries that were offered as samples were delicious and could be substituted for raisins, currants and other similar fruits in puddings, cakes and confectionery. Since the price of sugar is so high the drying of fruits should be of interest to all.

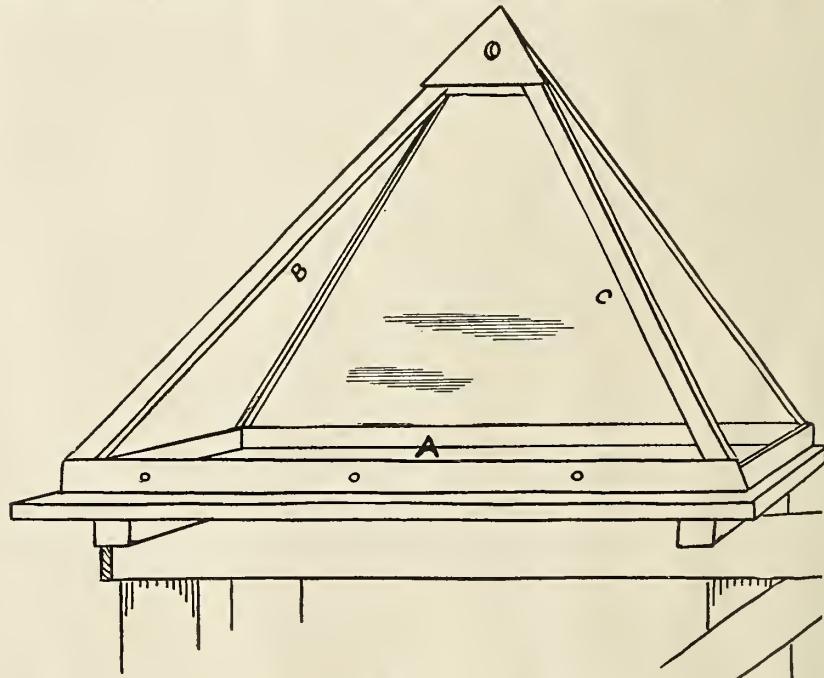


Fig I

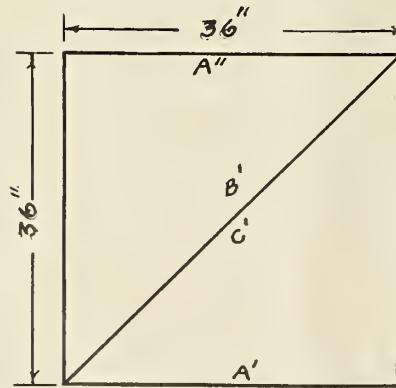


Fig. II

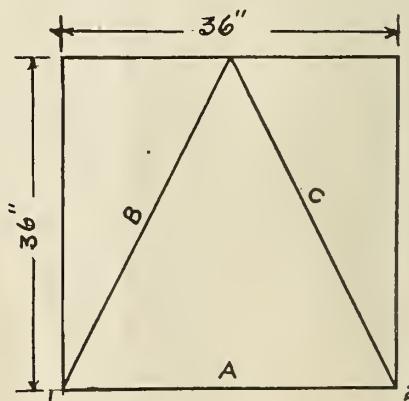


Fig. III

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Next to that, the greatest official endurance record is the 24-hour top-speed run. A Hudson Super-Six stock chassis ran 1819 miles in that time—as far as from New York to Denver. That broke the best previous stock chassis record by 52 per cent.

The 24-hour run, 102½-mile an hour speed, both made with stock chassis, and the 100-mile and the one-hour stock car tests, as well as many others, were official.

They were made under the supervision of the American Automobile Association. They mean more than the speed records won—more than the best time regardless of size or class in the Pike's Peak hill-climb, by a Hudson Super-Six Special, in which 20 racing cars participated.

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Cork, Drouth Spot and Related Apple Diseases

By A. J. Mix, Geneva, New York, Agricultural Experiment Station

TWO little-known apple diseases are found in the Champlain Valley. These are perhaps only different types of the same disease, are non-parasitic in nature, and are apparently closely related to the well-known fruit-pit or stippen disease. The names cork and drouth spot are proposed for them. Associated with the drouth spot are abnormal conditions of the twigs and foliage; it is proposed to call these drouth die-back and drouth rosette.

Cork is also found in Ontario and in New South Wales. It affects chiefly the Fameuse variety. Apparently the drouth spot has occurred in Maine and Virginia; and a closely related trouble occurs in the Pacific Northwest. Rosette has been reported from Colorado, California and Idaho; and both the rosette and die-back from the irrigated sections of Washington and Oregon. In the Champlain Valley certain orchards and even individual trees are more affected than others. It is only in these particular cases that the diseases assume economic importance.

Cork is evident in late June as dead brown spots beneath the skin of the fruit or around the core. The fruit is normal externally. Later the fruit becomes distorted and knobby, and brown corky areas are found scattered throughout the flesh. Drouth spot occurs in early June and fresh stages may develop throughout the summer if the weather continues dry. Superficial or sunken, irregular, dead, brown spots

show in the skin of the fruit, and dead brown areas may occur in the flesh beneath. In late stages the apple becomes cracked and deformed. The internal spots of both diseases are in close proximity to branches of the vascular system, and superficial drouth spots often show a wavy pattern of wrinkles apparently marking the subepidermal vascular network.

Under the microscope these spots show cells with brown amorphous con-

tents shrunken away from the walls. Sometimes cells are collapsed.

Die-back consists in the death of a portion of the twig from the tip backward. Beyond this a brown discoloration in the cambial region extends back into healthy wood. The dead twig may be replaced by a healthy lateral from the base; but often there is found near the base of the twig a rosette-like cluster of dwarfed, lanceolate leaves. This appearance and one in which a compact cluster of similarly dwarfed leaves crowns a long, bare twig have been included under the name rosette.

Field observations show that these diseases may occur on the best types of soil in the locality, under conditions of careful culture, and in young and vigorous trees. In certain cases a shallow soil seems connected with their development. They may appear, however, on deep soils of good physical condition. A condition of soil conducive to poor moisture supply seems connected with severe outbreaks. Drouth accompanied by high, dry winds seems to bring on a large amount of drouth spot and cork; a subsequent rainy period, as in 1915, causes them to disappear. In a rainy spring, as in 1916, some disease occurs in trees that have been previously affected, but the amount is inconsiderable and the period of development much shortened.

The initial stage of die-back is found on the season's growth in midsummer. The following spring this die-back and the accompanying rosette are very noticeable. Dry weather in late summer seems directly responsible for die-back of the season's growth. If a wet summer follows a dry spring, this die-back is practically absent, and there is evident recovery from its preliminary stages. No abnormal condition of the roots is necessary to the occurrence of die-back and rosette.

Since these diseases may appear, to a limited extent, in a rainy season, lack of soil moisture cannot be considered their sole cause. It is, however, the one predisposing factor. Other factors, yet unknown, may be operative.

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Assuming that an insufficient moisture supply to the fruit, accompanied by great transpiration, may bring about these diseases, it is suggested that the exact method of their occurrence may be through the leaves robbing the fruit of water. Leaves have a higher cell-sap concentration than green fruits and can remove water from the fruits by the process of osmosis. Chandler has called attention to this fact and demonstrated it with detached twigs bearing fruits and leaves. Following Chandler's method fruits have been rapidly wilted, and then, by placing the twigs in water, caused to regain their original state of turgor. In many such fruits spots resembling those of drouth spot, and occasionally of cork, were produced.

One experiment indicated that a reduction of the leaf surface of the tree during the critical period might prevent the drouth spot, but this is not suggested as a practical means of control.

The only control method which offers promise of results is one looking to conservation of soil moisture, and an even distribution of the moisture supply throughout the season. Clean cultivation is not sufficient. From certain suggestions of benefit in the Champlain Valley, and from results secured in the Pacific Northwest, clean cultivation followed by a leguminous cover crop, or the planting of a leguminous crop such as alfalfa in the orchard, seem methods which should be tried. Certain growers in the Champlain Valley are testing them.

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The Editor of "Better Fruit," with many others, has believed for many years that in a large measure the unsatisfactory prices realized on apples during some of the past years have been due to a lack of distribution more than to overproduction. The editor has given the matter careful study in connection with considerable research work covering a long period. Some facts in connection with these views are presented in an article by the editor elsewhere in this edition. The price of wheat in Liverpool sets the price of wheat all over the world. It is also a fact, to a large extent, that the prices of apples in the large distributing centers set the prices in all of the surrounding territories. Therefore, if the fruitgrowers can avoid

BETTER FRUIT

crowding the large centers by greater distribution throughout the small towns in the United States, the pressure can be relieved and a better level of prices maintained in all markets. It is the editor's belief that if each one of the associations would do as every jobber or manufacturer does, divide the territory into districts and put on a reasonable number of salesmen—or, in plain English, "drummers"—to sell the towns that have not been sold, that consumption can be increased by greater distribution and a better demand created and better prices obtained. If the different selling concerns, sales managers and directors would give this matter proper attention and add on a sufficient number of salesmen, properly distributed, the 1917 apple crop can be disposed of, in the opinion of the editor, without any doubt at satisfactory prices.

Winter Kill, or Die Back, has caused the fruitgrowers of the Northwest more or less anxiety in different sections. It is similar to the trouble called Rosette in some districts. While this trouble has caused more or less damage for many years, it is comparatively little understood, but investigation of the trouble in the Northwest points to drouth being at least the main factor as to the cause. However, the editor desires to call attention to the fact that, in his opinion, it may not be so much drouth as the nature of drouth. An orchard may not be irrigated at all and show very little winter kill. While an orchard that is irrigated that is allowed to become very dry in summer or fall may show up winter kill the next spring. So it seems, at least to the editor, that a change from wet to dry is more a factor than just simply dryness. Two articles on this subject, one by Leroy Childs of the Experiment Station at Hood River and one by A. J. Mix of Geneva, New York, appear in this issue, giving the result of their investigations and their conclusions, both well worth reading. Apparently it seems that the only remedy so far known is one of prevention, which is to maintain evenness of moisture condition and sufficient moisture throughout the season.

Economy in Harvesting.—The increasing cost of boxes, paper and all other supplies connected with harvesting the fruit crops apparently at the present time is unavoidable. With the increasing cost of living labor is demanding and is entitled to prices in accordance with living costs. It is important that every fruitgrower should introduce efficiency methods to the fullest possible extent to make up for increased costs so far as possible. It is a well-known fact that the expense of handling unpacked and packed boxes in the packing house and loading stations and warehouses is a large item, as most of this work has been done by hand. Some few up-to-date handling concerns and community packing houses have introduced gravity carriers, finding by so doing the cost of handling is greatly reduced. Without question if our warehouses had been equipped with gravity carriers last season the work would

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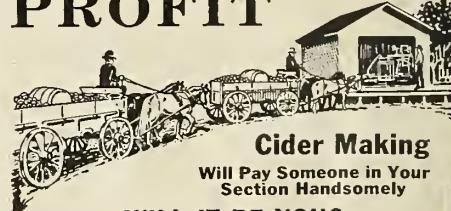
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have been done much easier and the congestion relieved, and the fruitgrower would have saved considerable delay unloading at the warehouse.

Home Drying of Fruits and Vegetables.—The June issue of "Better Fruit" contained a very interesting article on canning. In this issue is presented an article, with illustrations, as to the home drying of fruits and vegetables, with the suggestion and advice that every fruitgrower endeavor

to the fullest extent possible to put up good supplies of dried fruits and vegetables, not only for home use but for sale, as there undoubtedly will be a large demand. It is the duty of every fruitgrower and farmer to conserve all of the waste, in fact to allow no waste to occur. Therefore every fruitgrower and farmer should either can or dry all kinds of fruits and vegetables, for which he does not find a ready market at a satisfactory price as fresh.

The Red Cross Fund.—The quota for the Red Cross fund has not only been given very cheerfully, but the amount subscribed will far exceed the amount

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Home-Made Sun Dryer.—Miss Hoo-
ver, in a short article appearing else-
where in this edition, gives a design for
a home-made sun dryer, which is re-

ported to have been successfully operated in some districts throughout the Northwest. It is a simple, practical device, very inexpensive and easy to construct. Every fruitgrower and farmer should endeavor to conserve as much food during the summer, when it is plentiful, as possible, by all practical methods, such as canning, evaporating and drying.

Spraying Grapes to Increase the Yield.—The grape industry of the Northwest is comparatively new, but an old industry in California and many other states, in which the industry has



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received very careful attention and the best methods adopted for securing the greatest yield possible. All growers of the Northwest may not fully appreciate the importance of spraying a vineyard. Therefore a short but interesting article on spraying grapes is published in this edition of "Better Fruit."

Grading Machines.—The cost of grading by hand, especially with the increased cost in labor, is an unnecessary expensive method that should be discarded. Grading machines are now being manufactured which do the work at a saving of several cents per box, in much less time, requiring a great deal less space for carrying on the work. A number of grading machines are being manufactured at various prices. Grading machines will save probably five cents per box in doing the work. Any grower with 3,000 to 5,000 boxes of apples can nearly save the cost of a grading machine in a year or two.

Fruit Juices for Jelly Making.—Containers are very expensive. It is also quite an item of expense to buy all the sugar necessary at one time to put up jelly for the entire season. Fruit can be converted into juice, bottled, ready for converting into jelly later in the year, as required. The housewives of a great many fruitgrowers have tried this method and found it very satisfactory. Therefore it seems one well worthy of suggesting to the fruitgrowers, and that they may fully understand the method a short article is published elsewhere, entitled "Fruit Juices for Jelly Making."



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Winter Kill Needs Attention

By Leroy Childs, Hood River Experiment Station

DIE-BACK, or so-called "winter kill" of apple and pear trees is a common disorder in many orchards of the valley this spring. The term "die-back" has been adopted in many sections of the country for this trouble and it is more appropriate than the old name of

"winter kill." Winter conditions have nothing to do with fully 90 per cent of the trees that have failed to throw out normal foliage, and for this reason the term was very confusing, especially so as it sounds much like the term "winter injury." Winter injury is a term used for mechanical disorder of the tree brought about by freezing and thawing. Our commonest form of winter injury

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"Many owners of Hudson Super-six cars use Zerolene. We hear nothing but praise for it."

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is manifested in the form of a severe splitting of the trunk, usually on the southwest side of the tree.

Die-back, for the most part, is the result of mistreatment of the tree during summer and can be prevented by proper irrigation only. By irrigation is meant the maintaining of a uniform moisture condition of the soil during the growing season of the tree. Each orchardist must determine the condition of the soil at intervals during the summer; different soils demand different treatment. This determination can be made only by digging to a depth of three or four feet with a shovel or by using the soil auger at rather close intervals (not to exceed three weeks during the growing season.)

The cause which produces a diseased tree suffering from die-back has not been completely proved from an experimental standpoint. Observations of all workers, however, seem to indicate that it is the burning off of the root hairs or root feeders. Root hairs are the tender watery rootlets—soft and extremely delicate—by whose aid the plant draws food and water from the soil. These root hairs are very sensitive to heat and drought and if the soil—even though it be for a few days only—is permitted to become thoroughly dried out, these small rootlets are killed, resulting in a tree suffering from die-back the following spring.

Increasing soil fertility and neglecting the proper irrigation of the trees will work havoc in our orchards unless more attention is given to the proper use of water. By increasing fertility the number of root feeders is increased. The tree responds to this stimulus, forming a vigorous top which requires much moisture to maintain in a normal condition. If this supply of root feeders is all wiped out at one time, the tree undergoes a tremendous shock and the

BETTER FRUIT

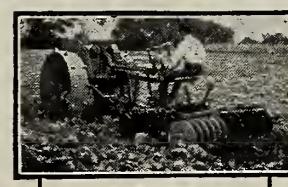
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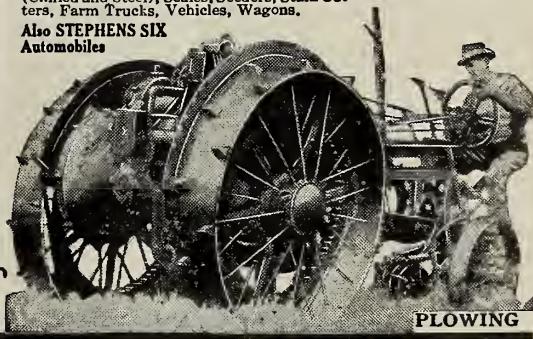
This is the original Two-Wheel Farm Tractor. It pulls two 14-in. plows; will disc, harrow, plant, CULTIVATE all hill and row crops, pull mower, binder, manure spreader, fill your silo—and do all belt work on the average farm. In fact, it will do anything you can do with horses; do it quicker, easier; and with less hired help. It weighs only 2800 lbs. but all its weight being on its two wheels—all its weight is traction weight. The tool you hitch it to forms the rear wheels and you do not have to pull around a ton of needless weight. It will back up with tools attached easier than a team will back. You can turn around in a small space; get close to the rows and the fences.

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THE OLDEST BANK IN HOOD RIVER VALLEY

transpiration, which occurs in the portion of the tree above ground quickly drains the tree of available moisture and food. Most trees suffering from die-back make a slight growth in the spring. This feeble start consumes all of the stored-up food and moisture, and as there are no more root feeders to supply more food and moisture growth stops. The result is that the tree dies back until it can reorganize its feeding system.

There are a good many orchards in the valley which are just on the edge of a die-back condition. A close observer can detect this condition by a few simple warnings given out by the trees before a serious condition has been reached. The writer has observed three which have proven good indicators and which are worthy of consideration. (1) Trees which have burned badly in the delayed dormant spray. (2) Dying and dropping of the fruit buds (before the pink stage is reached) on trees that appear fairly vigorous. (3) Premature yellowing and dropping of foliage in early fall. All of these indicators could be due to some other disorder than drought, but as a general rule drought condition could be suspected.

We are now more than ten inches behind in normal rainfall and for this reason irrigation should be started at once, especially in the orchards that are in cover crops.

This article has been written in the hope that it might bring to the grower the serious results that will continue if

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FRUIT WRAPPERS

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The **Apple Buyer** knows **Caro Fibre**—Wouldn't You **Pay** a little more for a box of apples if you knew that it **Would Keep Longer**.

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irrigation is neglected. During the past two years this neglect has cost Hood River many trees and many thousands of dollars. Unlike some of our plant diseases and insect pests, remedial measures lie in the hands of the orchardist and of him alone. This remedy is the proper use of water.

In the near future the writer will submit a few suggestions for the handling of trees that have become so diseased.

Increase Grape Yield by Spraying

(U. S. Department of Agriculture)

GRAPE insect enemies and diseases may be controlled and a good crop of the berries practically assured if a careful spraying schedule is carried out, say A. L. Quaintance of the Bureau of Entomology and C. L. Shear of the Bureau of Plant Industry of the United States Department of Agriculture. Owners of small orchards and vineyards do not sufficiently appreciate the fact, the specialists point out, that by the expenditure of a little time and money a large proportion of the fruit may be saved, repaying many times the trouble involved in its protection.

The principal insect enemies of the grape are the grape berry moth, the grape rootworm, the rose chafer, the grape-leaf folder, and the eight-spotted forester, all of which are eating insects; and the grape leafhopper and the brown grape aphis, sucking insects. The principal diseases which attack grapes are black rot, downy mildew, powdery mildew and anthracnose.

The use of combination spray solutions containing chemicals which act as insecticides or fungicides is advocated by the specialists. The following spray schedule is recommended:

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STEAM PRESSURE
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Housekeepers, farmers, growers—everybody can save and make money preserving meats, fruits and vegetables with a National Outfit. Makes cheapest and toughest meat cuts tender and delicious. Preserves fruits and vegetables without waste or spoilage. Use glass jars or cans. Simple—safe—economical. Outfits for home or larger. Write for details, stating what you will can and capacity desired.

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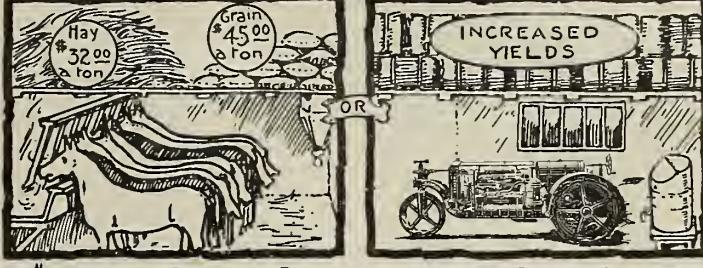
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For stationary work the motor delivers its power straight to the belt-pulley—not a gear in motion.

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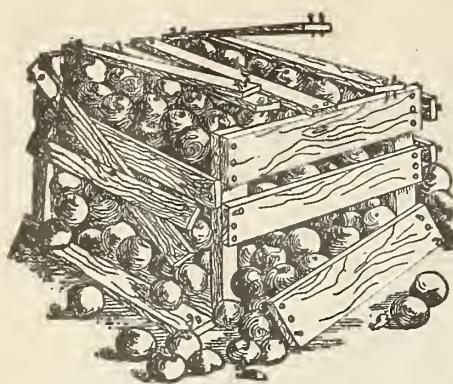
Points to remember when consigning apples to the London Market

1.—We Specialize in Apples

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Western Cement Coated Nails for Western Growers

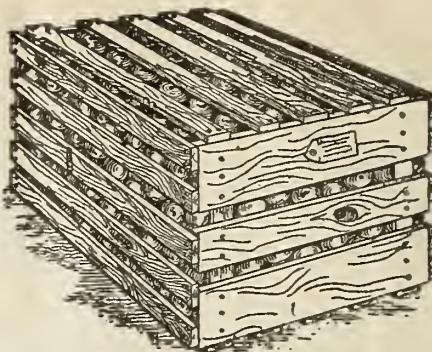
Our Cement Coated Nails are always of uniform length, gauge, head and count. Especially adapted to the manufacture of fruit boxes and crates. In brief, they are the Best on the Market.

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The Cutler Fruit Grader

IS an EFFICIENT and RELIABLE MACHINE which will lower the cost in your Packing House and relieve you from dependence on expert packers.

It has proven a good investment in scores of up-to-date packing houses during the past five years.

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WHEN WRITING ADVERTISERS MENTION BETTER FRUIT

SPRAY SCHEDULE

First application: About a week before the blossoms open or when the shoots are 12 to 18 inches long, spray with bordeaux mixture, 4-3-50, for fungus diseases, adding 2 to 3 pounds of arsenate of lead paste, or one-half that quantity of the powdered form, for flea-beetle, rose chafer, etc.

Second application: Just after the blossoms fall, spray with the same materials as in the first application for the same fungus diseases and insects and for the grape berry moth, grape leaf folder, and adults of the grape rootworm.

Third application: About two weeks later use bordeaux mixture 4-3-50, arsenate of lead paste 2 to 3 pounds, 40 per cent nicotine sulphate 1 part to 1500 parts of the spray mixture, for fungus diseases, berry moth, light-spotted forester, grape leaf folder, brown grape aphis, grape rootworm, and grape leaf hopper. To destroy the leaf hopper, direct the spray against the lower surface of the leaves. To control the berry moth thoroughly coat the grape bunches with the spray.

Fourth application: About 10 days later, or when the fruit is nearly grown, if black rot or mildew are still appearing, spray with neutral copper acetate or verdigris at the rate of 1 pound to 50 gallons of water.

Fruit Juices for Jelly Making Without Sugar

Fruit juices for use later in jelly making can be sterilized and bottled without sugar and made into jellies at the housewife's convenience. This enables her to do with fewer jelly glasses and to distribute her purchases of sugar for jelly making through the year. Moreover, with the bottled juice she can make a greater variety of jellies, as juices which will not jell can be put up when the fruit is ripe and combined later with fruits that will jell, or fruits ripening at different seasons can be combined. For example, the juice of strawberries, cherries or pineapple can be kept without sugar and later when apples are plentiful can be made into combination jelly.

From the unsugared sterilized juices of currants, apples, crabapples and grapes, kept from 9 to 18 months, the

Bureau of Chemistry, United States Department of Agriculture, recently made jellies of excellent texture, flavor and color.

To put up unsugared fruit juices for jelly making, proceed exactly as if jelly were to be made at the time. Cook the fruits until they are soft and strain out the juice through a flannel bag. Heat and pour while hot into bottles previously scalded. Fill the bottles full, leaving no air space between juice and cork or seal. Place the filled sealed bottles on their sides in water near the boiling point, and keep them in the bath for about 30 minutes. Make sure that the corked or sealed end is under the hot water. As soon as the bottles are cool, cover the cork with a paraffine seal. Thorough sterilization and sealing are absolutely essential to success.

To make jelly from the sterilized juice, test its jelling quality, add the proper amount of sugar, and proceed as in making jelly from freshly expressed juice.

Helping Fruit Growers and Shippers

THE results of investigations carried on by the United States Department of Agriculture in the handling of Northwestern apples for and in cold storage have been so conclusive that this work may be considered as completed, according to the annual report of the Bureau of Plant Industry. The results brought out particularly the importance of picking apples of various varieties at the proper stage of maturity, of careful handling in all harvesting and storage operations, of prompt cooling, and of proper storage temperatures. During past seasons the growers have frequently suffered very large financial losses from either too early or too late harvesting of apples of certain varieties, such as Jonathan, Rome Beauty and others. The work has demonstrated clearly that the storage life of apples can be prolonged from weeks to months by picking at proper maturity, and has shown how the grower may know when his fruit is of proper maturity for best

ORCHARD YARN

Listen, Orchardists: Now is the time to tie your fruit trees. All limbs can be readily seen; the spurs are less easily broken off than later; the saving of time is considerable and yarn is probably as cheap as it will be this season. **Orchard Yarn** is the correct method of supporting trees and the saving of a few trees is worth the cost of the yarn for an entire orchard.

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Wholesalers of Nurseries Stock and Nurseries Supplies
A very complete line of
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SPECIALTIES
Clean Coast Grown Seedlings
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You need a new DE LAVAL SEPARATOR NOW

1st If you are still using some gravity or setting process of creaming—

BECAUSE YOUR WASTE IS GREATEST and quality of product poorest in mid-summer when the milk supply is heaviest.

BECAUSE TIME IS OF GREATEST value on the farm at this season and the time and labor saving of the good separator counts for most.

2nd If you have a very old De Laval or an inferior separator of any kind—

BECAUSE THE LOSSES OF THE poor separator from incomplete skimming and the tainted product of the hard-to-clean and insanitary separator are the greatest at this season.

BECAUSE OF THE GREAT ECONOMY of time at this season in having a separator of ample capacity to do the work so much more quickly.

BECAUSE THE NEW DE LAVAL IS so much simpler and more easily handled and cared for than any

BECAUSE THE SKIM-MILK IS poorest without a separator in hot weather and often more harmful than helpful to calves.

BECAUSE THE WORK OF A NEW De Laval Cream Separator is as perfect and its product as superior with one kind of weather as with another.

other, and you can not afford to waste time these busy days "fussing" with a machine that ought to have been thrown on the junk-pile long ago.

BECAUSE THE DE LAVAL SEPARATOR of today is just as superior to other separators as the best of other separators to gravity setting, and every feature of De Laval superiority counts for most during the hot summer months.

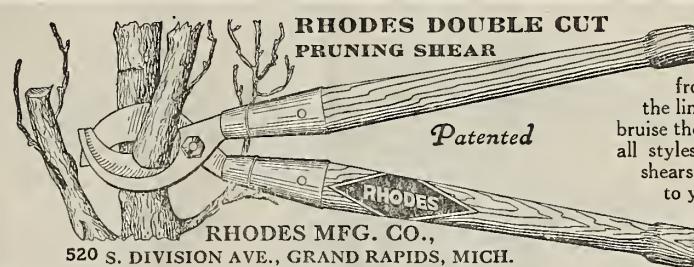
These are all facts every De Laval local agent is glad of the opportunity to prove to any prospective buyer. If you don't know the nearest De Laval agency simply write the nearest main office, as below.

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LARGEST DAIRY SUPPLY HOUSE ON THE PACIFIC COAST.
Alpha Gasoline and Distillate Engines, Ideal Green Feed Silos, Acme Ensilage Cutters and Blowers, Irrigation Equipment, Centrifugal and Deep Well Pumps and Alpha Spraying Outfits. Send for special catalog.

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Portland, Oregon

results in storage. In connection with the investigations of the cold storage of Newtown apples in the Watsonville district in California, the most important discovery is without doubt the relation of tree vigor to keeping quality of fruit in storage. Experiments extending over two seasons have clearly shown a marked and consistent difference in the keeping quality of fruit from different trees, particularly trees that for any reason differ in vigor and general healthfulness. During the past season the possibilities of common or air-cooled storages in different sections

were carefully investigated. The results of these investigations have shown clearly the practicability of such storage and the economic saving resulting to the industry in the use of houses properly constructed and managed.

The results of fruit-handling investigations during the past few seasons show that the most important factor in determining the condition of either fruits or vegetables in transit and after arrival on the market is the temperature maintained in refrigerator cars during transportation. All fresh fruit is alive and the life activities continue

with greater or less rapidity until it goes into consumption; the temperatures maintained in transit determine to a great degree both the rate of ripening and the development of fungi and other decay-producing organisms. The investigations during the past season have had mainly in view the improvement in refrigerator car equipment, especially as regards insulation and facilities for free air circulation. The results of the work thus far have shown that through certain modifications in the ice bunkers, through the use of racks, or false floors, and through better insulation, it is entirely practicable to increase the efficiency of refrigeration, and to haul larger loads of fruit than formerly and with a lesser ice consumption.

The results are particularly of importance to the shippers in that they can obtain uniformly better refrigeration ultimately at a lesser cost. Probably the most important development in connection with these investigations is the practicability of using small amounts of salt during the first two icings in cars with modified bunkers and racks to accomplish a quick cooling comparable with precooling in either warehouses or car-precooling plants, with practically no extra cost and no delays for precooling. Another important factor is the fact that the fruit is subjected to no extra handling except the handling that is necessary to place it in the car as it is ordinarily loaded. It also makes possible the shipment of tree-ripened or more fully matured



Scores of the most successful fruit-growers in the Pacific Northwest now recognize the need of an

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This silo and a few good cows will start you on the road to successful dairying.

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**The Chas. K.
Spaulding
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fruit in good condition, thus supplying the consumer with a product possessing its maximum fine quality.

In addition to outlining the work done in the interest of citrus fruit growers, and in lessening the losses from watermelon rot and developing better methods of handling muskmelons, the report mentions results obtained in dealing with diseases of deciduous tree fruits. Cedar rust on apples, it states, continues to attract considerable attention and has been severe in certain localities. One of the striking things, however, in orchard pathology has been the fact that in many of the large commercial orchard districts of the eastern Appalachian Mountains, where cedar rust threatened the destruction of the value of the orchards, complete or partial eradication of the cedar trees in the vicinity of the apple orchards, usually within a radius of one mile, has completely solved the problem in the most practical, simple and permanent way and at very slight expense. While the destruction of the red cedars is to be regretted, this tree in the vicinity of apple orchards has come to be a veritable pest tree, and where the cedar rust fungus has been peculiarly abundant the necessity for its destruction has been amply demonstrated by the repeated experiences of the past few years.

Practical field tests in perfecting the methods of control of apple bitter rot have been carried on in the Ozark section with very satisfactory results. Removal of cankers and diseased fruit, supplemented by spraying, reduced damage by the disease to two per cent on early varieties and one per cent on late varieties. The orchard in which these field tests were conducted had previously, despite our best efforts in

Attention, Fruit and Vegetable Growers

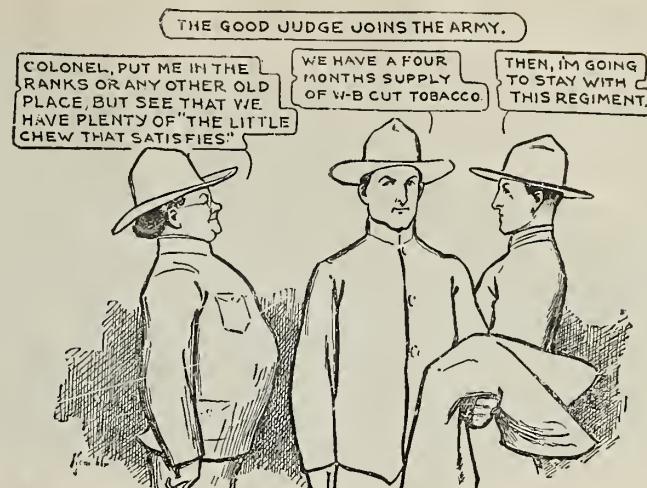
CAN your Fruits, Vegetables, Meats and Fish in Sanitary Cans, with the H. & A. Steam Pressure Canning Outfits, built in Family, Orchard and Commercial size; seal the cans with the H. & A. Hand or Belt Power Double Seamer; they will save your perishable fruits and vegetables at ripening time when nothing else will. Write for descriptive matter.

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FRUIT BOXES
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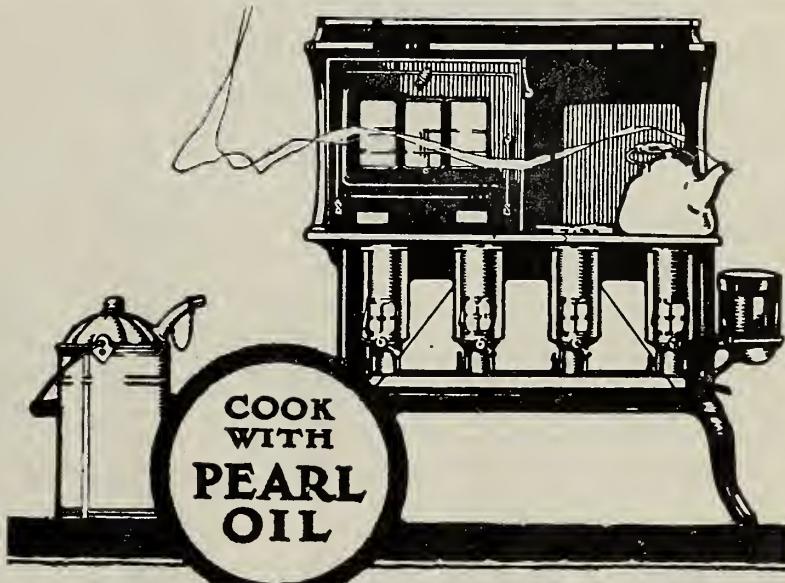
Good standard grades. Well made. Quick shipments. Carloads or less. Get our prices.

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WHEN men are drawn together in the army, you find out a lot about their likes and dislikes. It's always been a great place for the spread of W-B CUT popularity. They show each other why you shouldn't take more than a *little* chew of W-B CUT. Every shred is chock full of sap; a big chew is too rich. They take to W-B CUT, strong; nothing is too good for our soldiers.

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ECONOMY

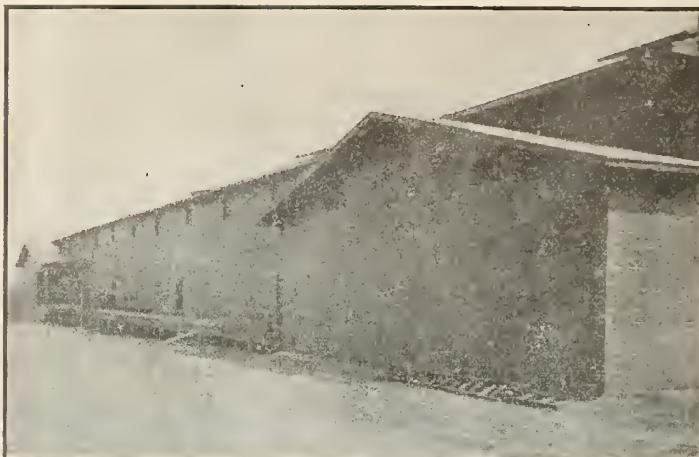
An oil cook-stove is cheaper to buy than a wood or coal stove and it's much cheaper to operate. Meals in a jiffy, and a cool kitchen in summer.

All the convenience of gas—economical for all the year 'round cooking. Bakes, broils, roasts, toasts. Steady, evenly-distributed heat, the best for cooking.

The long blue chimneys prevent all smoke and smell. In 1, 2, 3 and 4 burner sizes, with or without ovens. Also cabinet models. Ask your dealer today.

NEW PERFECTION OIL COOK-STOVE

STANDARD OIL COMPANY
(California)



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IS INSULATED WITH

Cabot's Insulating "Quilt"

at the lowest cost and with the greatest efficiency and permanence. Quilt is made of eel-grass, the fiber that will not rot, will not burn, will not harbor insects or vermin. It makes a thick cushion of dead air spaces that keeps out heat better than other insulators that cost much more and that are not permanent, sanitary or safe. One layer of Quilt is equal in insulating power (by actual test) to forty or fifty layers of common building paper. It is easy to apply, low priced and never goes to pieces in the work.

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Conservo Wood Preservative—preserves posts, planks and all other timbers. Cabot's Creosote Stains—for shingles, siding and other outside finish.

United States Government Bureau of Standards tests show Cabot's Quilt more efficient than any other insulator, including cork board.

spraying, lost from 10 to 25 per cent each year. Adjacent orchards during the year lost about 50 per cent on early varieties and 25 per cent on the late varieties.

The bacterial spot on peach and plum has not proved amenable to spray treatment. Experiments in controlling this disease by means of nitrate of soda applied to the soil were tried out on a large scale with complete success. The life history of the organism causing this disease is being studied.

The work of the present year on stigmonose of fruits has given further confirmation of the previous year's experiments and established the connection of certain insects with particular types of fruit spotting. Experiments on rosy aphis stigmonose have been carried out at Staunton, Virginia, and similar work has been carried on, in co-operation with the Bureau of Entomology, at Wenatchee, Washington. The work in Virginia has shown conclusively that much of the so-called "York" spot of the Eastern states is stigmonose due to insects. This type of disease is, therefore, capable of control by spraying methods developed by the Bureau of Entomology. Experiments have been made in the control of this disease, and the first year's results of spraying show that the shipping qualities of the fruit from sprayed plats will stand up in shipment far better than the fruit from the unsprayed plats.

Frank H. Lathrop has been appointed research assistant in entomology at the Oregon Agricultural College Experiment Station. He will conduct laboratory and field work in entomology.

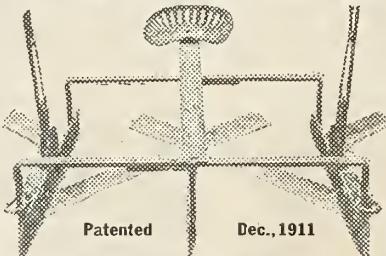
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